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LIVESTOCK
MANURE
DISPOSAL

VACUUM
SILAGE

EVALUATING
HERD SIRES

SEPTEMBER, 1966



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THE MACDONALD LASSIE

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Macdonald College

Publisher
RONALD J. COOKE

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Vancouver —
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J. L. JACKSON
3610 Main St.,
Area Code 604
TR. 6-6541

The Macdonald Farm Journal is published by Ronald J. Cooke Limited, also publisher of Resort Administration, 58 Madsen Ave., Beaconsfield, P.Q. • Authorized as second class mail by the Post Office Department, Ottawa, and for payment of postage in cash. Price 25 cents per copy. Subscription rates are 2.00 per year; 3.00 for two years in Canada. U.S. and Foreign: \$4.00 per year. Address subscription renewals to Macdonald Farm Journal, 58 Madsen Ave., Beaconsfield, P.Q. 697-2916.

macdonald

FARM

journal

VOLUME 27, No 9

SEPTEMBER 1966

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INSIDE

THE EDITOR'S COLUMN

EVERY FARM AN EXPERIMENTAL FARM

Six days spent this past month judging two pasture competitions in the Eastern Townships has strengthened our conviction that every farm should carry on its own private research program. The difference in plant growth, in animal behaviour, in soil response, in human factors between countries, between provinces, between counties, even between farms, is sufficiently great that only the broadest principles can be applied in any area without fear of error or contradiction.

We saw pasture after pasture of Ladino clover growing more luxuriantly than we have seen anywhere else on the continent. We saw fields of corn which seemed to make mockery of the heat-unit map. We saw 100-bushel crops of oats not recommended for provincial use. We saw rough pastures responding to fertilizer, though in other parts of the country it is an unprofitable practice. On the other hand, we were told locally that Alfalfa and Trefoil would not grow, even though scattered stands through the area denied it. One man believed, but had no way to prove, that a certain breed of cows, in local conditions, produced milk cheaper than any other. Perhaps, also, there is good reason for the local use of high nitrogen fertilizer on Ladino pastures.

Institutional and government research stations are well able to develop the broad principles, and to carry out the basic research at the rapidly advancing frontiers of knowledge. But behind this spearhead of work is a great empty no-man's land, widening every year, where little effort is being made to adopt and develop principles and findings for local use.

An Experimental Farm system expanded to cover every county, even if we could afford it and could find the staff, could tackle only a fraction of the questions. It could only scratch the surface of the work to be done in applying research results to local conditions, of finding answers to local problems, of determining the most profitable combination of a thousand variable factors.

The apparent answer, then, is for every farm to carry its own small experimental program. Each year, a certain percentage of time and money should be allowed for finding answers, for trying new ideas. Such projects need be no more elaborate than planting one acre of the barley field to a new variety, or doubling the rate of nitrogen for six rows of corn, or feeding one cow on a high-energy ration, or one bag of boron fertilizer for a yellowing alfalfa field. The results will provide a sound basis for continuous upward adjustment of the farm program, and a sense of satisfaction from progress improvement.

Or the projects may be more complex, planned by local committees of farm organizations, and divided among co-operating members. Few farm communities have not, among their number, graduates of agricultural colleges, well qualified to devise and develop such projects.

Farm suppliers have standing offers to provide materials without cost for organized trials. The companies anticipate increased sales; the co-operators can prove, without risk, the wisdom of an investment.

This is 1966. By 1974, it is said Knowledge in agricultural and in all other fields, will have doubled. Problems will have multiplied, but so also will have opportunities. Can we afford to be indifferent to the opportunities thus offered?

Walker Riley



PTO-driven pump for liquid manure system. Can be transported by attaching to a 3-point hitch

Livestock Manure Disposal

The size of the farm manure disposal problem is significant. The 1962 census on Quebec shows that the livestock population in Quebec was 1,032,000 cows, 924,000 other cattle, 171,000 sheep, 970,000 pigs, 13,367,000 chickens. By comparing the amount of manure released by livestock in comparison to the sewage from humans we get these figures; 16.4 people for each cow, 2.45 for each sheep, 1.9 for each hog and .014 for each chicken. The size of the manure disposal problem then becomes equal to sewage from 25,000,000 persons.

When these wastes are spread widely and evenly over an area, evaporation of the liquid portion and decomposition of the organic material takes place. However the trend in Quebec continues toward larger confinement units for beef cattle, hogs and poultry. Even on dairy farms where much of the manure was deposited by the cattle on pastures during the summer, units are being constructed which handle and feed the herd on a concrete lot.

Manure disposal in large scale confinement livestock enterprises is therefore becoming a major problem. Since the only land involved in many of these

feeding operations is occupied by buildings and driveways, there is no place to spread the manure. Many progressive livestock producers are considering enterprises in the order of 1000 feeder hogs, 500-1000 beef feeders, 100-200 head of dairy cattle and 60,000 laying hens. Such concentrations of livestock are a real danger to surface and ground water supplies.

ALTERNATE METHODS OF DISPOSAL

Disposal by stabilization ponds (lagoons)

The use of stabilization ponds for the disposal of manure is relatively new although the stabilization process has likely been taking place in the waters of the earth since the beginning of time. This method is being used successfully for human sewage in Canada but has run into problems when used for getting rid of animal waste. Most ponds for animal waste are overloaded and become just septic tanks. The odour is great and there are dangers of ground water pollution and surface water too if they are affected by rain run-off or snow melt. The amount of solids in animal manure is large when compared to human sewage.

(continued on page 10)

By John R. Ogilvie, Assistant Professor, Agricultural Engineering Department, Macdonald College



The ground sheet — resting on a cushion of grass.

Reports of the success of vacuum packing silage in New Zealand and in Britain have caused much interest in areas of this country where it is difficult to air-dry early-cut hay. This article from "Agriculture", the publication of the British Ministry of Agriculture, is reproduced at the request of Dr. John Bubar, who believes it to be an ideal method of getting maximum preservation of the grass-legume crop, at reasonable cost for the container. To our knowledge, this method has not been tried under Canadian conditions.

British prices are reported at \$1.50 per ton for covering material and seals for the first year, and 75¢ the following years.

VACUUM SILAGE*

The Use of Plastic Sheets

C. P. van Zeller

The vacuum method of silage-making, which was first developed in New Zealand, is now creating widespread interest in Britain.

Vacuum silage is made by sealing the grass between two sheets of thin polythene film and removing air with a vacuum pump — a milk pump is sufficient. The first essential is to make sure that everything likely to tear the bottom sheet has been removed from the site. The bottom sheet should then be spread out on a two-inch layer of lush chopped grass as a further precaution. Wind is

always a problem, and a few fertilizer bags half-filled with soil or sand will hold the sheet in position admirably. By folding eighteen inches of the sheet under all the way round, the difficulty of not having enough of the sheet free for subsequent sealing is avoided.

Machinery should not be driven on until a foot or more of chopped material has been dumped and spread. Using the handles instead of the tines of hay forks in the initial stages many a hole in the sheets. The stack can be built subsequently by running over with tractors

and trailers, using buckrakes, or from the ground with a front-end loader. If the former machinery is used, there will have been some consolidation in the centre and this will have to be balanced by building up the edges. Failure to do this may result in the edges sloughing off under vacuum. The kits contain a measuring cord so that you can check that the top sheet will still cover the stack and meet the bottom sheet.

As consolidation by rolling is virtually eliminated, heating within the stack will start up fairly quickly. Preservation in the vacuum method relies on air removal, and thus the medium for chemical heat production in the stack is also absent. Heating before sealing should be prevented and the stack should therefore be built in the shortest possible time; two days has been suggested as the limit before sealing the sheets and evacuating the air. If this is insufficient time for building, then rolling will keep the temperature down.

A cubic foot of chopped grass is half air, and a complete vacuum would therefore reduce the heap to half its size. For economy of polythene sheet and ease of handling, the stack should be built up to the maximum height (about 9 feet), air evacuated until it is half size, and then reopened the next day or at a later date for topping up. Reopening the following day usually causes no problems, but it has been reported from New Zealand that, where there have been failures for no obvious reasons, the additional material had a very high moisture content. There should therefore be no undue quantity of water brought in during the early stages of fermentation, either by rain falling directly on the exposed stack or with very wet and lush material. A delay of at least two days has been advocated as the minimum time lapse, but this has yet to be substantiated.

Covering and sealing

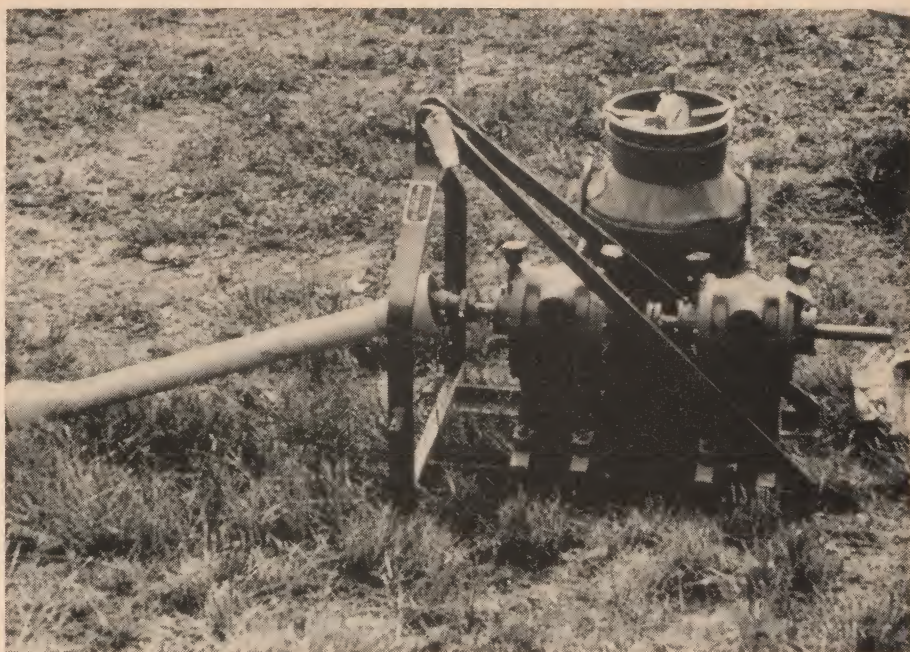
The stack hose (for pumping out the air) should be put in place before spreading the top sheet and should be covered with grass. Spreading the top sheet can be a tricky operation in even a moderate wind, but with care the hazards can be reduced. The sheet should be kept folded for as long as possible, and the first move is to unroll it lengthwise on top of the stack along the windward side. The edge should then be slid down the side and attached to the bottom sheet, beginning at one corner and progressing along the length as far as the next corner. The remainder may then be unfolded by gripping the other edge (the sheet should be gripped in handfuls, not just one thickness, or the fingers may tear it) and sliding the sheet across the stack and down the

other side. It should be pulled down and the sealing tubes attached as near the stack as possible with all the surplus polythene on the outside of the seal. This cuts down the quantity which could flap in the wind. A fair number of bags of soil, or motor car tyres, are necessary to keep the sheet down, but even so there may be sufficient movement to cause stalky grass to puncture it after the vacuum has been released by the production of carbon dioxide. A stack net would be more suitable where very windy conditions are experienced.

Applying the vacuum

A standard milking machine vacuum pump is adequate for evacuating air from the stack and a 100-ton stack is reduced to about half its size in about two hours. It is as well to have a water trap between the stack and the pump. An old churn, provided it can be made airtight, serves the purpose adequately. A sight glass can be fitted to the side, and a vacuum gauge and adjustable relief valve on the top. The valve enables the farmer to predetermine the vacuum he wants, so that he need not remain at the site to switch off immediately. Vacuum pump units are usually made up and mounted on a frame to fit the tractor linkage and are p.t.o. driven.

A vacuum up to 18 inches of mercury is desirable because the higher it is the greater the consolidation and reduction in size of the stack. But under conditions of high moisture content, only 6 or 8 inches may be reached before water is seen to flow into the trap. This pressure will be enough for the purpose of fermentation, but the quantity of material that can be enclosed in a given sheet size will be rather restricted.



PTO-driven vacuum pump. If the silo is located near a power source, a regular electric pump is satisfactory.

If there is not an obvious and increasing pressure on the top and sides, once the surplus air has been removed, then there must be a leak somewhere. The pump should be turned off at once and all holes mended — the in-rushing air can be clearly heard. If the leak happens to be at the bottom, nothing can be done short of removing all the grass, mending the tear and starting all over again. In many such cases removing the grass will be too much work and in all probability the seal will be good enough to exclude air and ensure good-quality silage. Under these conditions some of the advantage of extreme con-

solidation will be forfeited and it will not be possible to put in the maximum quantity.

The next day (following pumping out) the polythene bag is usually found blown up by carbon dioxide which has been produced by the plant material. This gas is itself a preserving agent and should not be pumped out. If left untouched, the gas gradually disperses and the top sheet comes back into contact with the silage again. Should it be feared that the top sheet may split, then it would be wise to open the seal and allow some of the gas to escape.

There may also be trouble with effluent collecting at the lowest point within the bag; this should be allowed to flow out. There have been cases where the seal has burst open or the sheet has split due to the weight of effluent. A permanent drain pipe can be inserted through the bottom sheet, taped into position and fitted with a cork. This may be made automatic by drilling holes in the under side of the pipe and covering with a piece of motorcar tube held in place above the holes by an elastic band. This would act like a flap valve and release effluent when the pressure builds up. Alternatively, the seal can be opened as necessary.

After the final material has been added to the stack and the air pumped out, the polythene must be protected from wind and frost damage during the storage period. An inch of soil or sand, a stack net, spreading two or three loads of chopped, lush grass, or enough old motor-car tyres or polythene bags half-filled with soil are the possibilities. The first is the most efficient and such a small quantity is easily removed with

(continued on page 10)



The completed silo: Air has been removed by a regular vacuum pump.

The Role of the Professional Home Economist and Dietitian in Consumer Education

By Helen R. Neilson,
Director, School of Household Science
Macdonald College, McGill University.

INTRODUCTION

This century has witnessed unprecedented technological developments as a result of research by governments, industry and educational institutions. Now, the well developed countries find themselves faced with what appears to be an ever-widening gap between the technical knowledge of the specialists and the lack of understanding by the public of the significance of these advances. For instance, our knowledge of human nutrition has reached the point where it should be impossible for food faddists and quacks to find a receptive audience for half truths and misinformation; yet we know that in North America these persons have no difficulty in commanding an enthusiastic following, and grow rich on the sale of books and nature foods. In the underdeveloped countries the gap between knowledge and understanding is even wider and we all recognize the sad fact that undernutrition is claiming young lives, often because of poverty resulting from primitive methods of agriculture; at a time when better methods of crop production, animal husbandry and marketing are known and practiced in the advanced countries, and when nutritional needs of the young child are well known.

It would be hard to deny that the gap is serious, and our purpose at this Conference is to examine the progress made to date in applying technical knowledge for the good of mankind, and also to examine ways and means of keeping the public adequately informed about the significance of scientific achievements, particularly with respect to food production and the practice of good nutrition.

The twentieth century has witnessed many dramatic changes in our social attitudes and standards of living. Historians will undoubtedly look at the changing role of women in the first half of this century as one of the most significant events in the evolution of human society. The emergence of women from the home and their gradual absorption into the business and industrial life of the nation has been paralleled by the development of Home Economics

courses. As working mothers increased in numbers, it became necessary to teach the girls in schools those skills which were taught formerly in the home and the community by example, practice and contact with older women.

Since the turn of the century, also, women have been admitted to professions and trades previously restricted to men. The success of these women and the high academic standing achieved by women in the university courses has proved that women are intellectually capable of competing with men. Now girls are encouraged to compete for positions in business and industry and the education of an academically capable girl does not differ from that of a boy. When the woman marries, it is assumed that she will adjust instinctively to the role of a housewife and make the right choices from the confusing array of household helps and packaged foods available in the supermarkets. The fact that many women do, speaks highly for their ability to adapt. But in many cases the young mother who has held a job in business or industry before marriage, finds that she is uninformed in matters vital to the welfare of her new family and unable to judge the relative merits of the producers' goods.

Contrast this woman with her grandmother or great grandmother who came to her household tasks carefully trained and with a clear understanding and acceptance of her role as a wife and mother. She knew too, that if she failed to acquire the household skills and knowledge considered as a necessary part of her education, she would not be acceptable as an addition to the family of the groom. It seems as if the pendulum has swung the whole way. Now, there are many young women who lack knowledge about matters of vital importance to their family's welfare, neither they, their parents nor educators are very much concerned. Women appear to have been successfully indoctrinated into thinking that anything to do with the household is less important and requires less ability than other activities and in accepting this standard they are helping to undermine the very structure on which the family is built.

Unless we manage to swing the pendulum back a little, we shall only continue to hasten the breakdown of the family unit. That there is concern about this matter is evident from the forthcoming Canadian Conference on the family. The prophets who claim that our society will soon be stratified in age or peer groups and that the family will no longer be the foundation and cornerstone of society in the future may not be too far wrong, one can see the trend already.

Also overlooked in our society is the changing role of the father in the care of the young children and in the general routines of the home. The tendency of young couples to live apart from older relatives, who traditionally have helped in emergencies, plus the fact that domestic help is almost impossible to obtain, has increased the participation of the men in household routines. And yet the old-fashioned concept that a boy should not learn about household routines, still prevails.

The education of girls for their roles as mothers and citizens in a technical age has not been faced realistically, much less solved. And although it is not within the scope of this paper to discuss the problems of our society with respect to the role of women, it is necessary to mention these trends in order to set the stage for a discussion of training and work of professional home economists, today.

Home Economics At The University

Although Home Economics at the university level has as its basic aim the welfare of the family and the home, it is not centered on homemaking activities. The objective is to educate women so that they may make a contribution in the institutional, business or industrial organizations which complement or replace the basic home industries of the past. The knowledge necessary to ensure that graduates will be adequately equipped for the task is contained in a strong core of science subjects, plus those subjects deemed essential for the intellectual development of a university student. In general, the public lacks understanding of the university curriculum in Home Economics. This, plus

the fact that anything to do with the home lacks status today, has prompted one university to consider changing the name to food and textiles sciences.

Home Economics Programme in Schools

Graduates from Home Economics courses at the university level are absorbed mainly into the teaching or dietetic professions. Since there is an increased demand for teachers, resulting from our population increase, and since the drop outs from marriage continue to deplete the professional ranks, the shortage of home economics teachers is chronic.

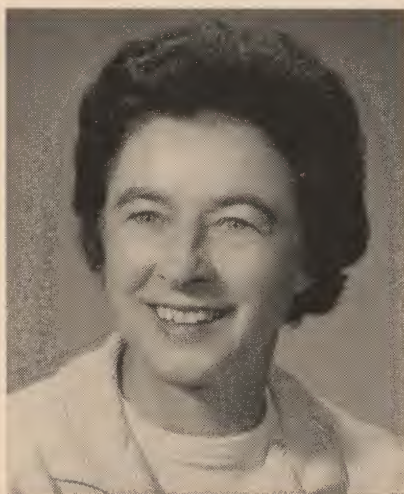
Although there is a tendency for education to lag behind technical developments, home economics programmes have changed considerably since they were first introduced in the schools early in the century, and now there is growing emphasis on consumer education. In some cases, however, it has been a struggle to break away from the traditional pattern of teaching skills, mainly. The resistance has not been on the part of the home economics specialist teachers as much as from educators in positions of responsibility, who cling to the old-fashioned concept that home economics should consist of cooking and sewing classes and should be aimed at developing skills.

If the welfare of the family is the concept on which home economics is based, it must adapt to the changing socio-economic pattern of the times. It must be a dynamic programme and not a static course, hence the need for constant revision to provide an effective school programme. It is sometimes a discouraging task in the face of indifference from parents and educators alike. To be fully effective it needs to be accepted as a vital and necessary part of every girl's education.

The amount and quality of the nutrition education offered in schools depends on whether there is a home economics teacher on the staff and whether time can be scheduled to permit the teaching of nutrition. Too often nutrition has to be left for the general classroom teacher to instruct the pupils at the primary school level. Usually she has no academic background in nutrition or the sciences on which it is based. She may have poor food habits, herself. The school lunch programme which offers unlimited opportunity to promote good nutrition is rarely considered by the school authorities as a means to this end. In fact in many schools the Students' Council is allowed to sell sweets and carbonated beverages in the lunch room area to provide funds for their own activities.

The problem goes deeper. There is no attempt to teach the fundamentals of

nutrition to teachers-in-training, hence future school principals, inspectors and other senior personnel in education may not be fully informed of the importance of food for health. Another influential group which can assist with nutrition education is the medical profession. However, because it is possible for a medical student to graduate from some universities without any instruction or emphasis on nutrition there has



HELEN R. NEILSON

been very little support from the medical authorities in the community to encourage the teaching of nutrition in our schools. Indeed, it is only in underdeveloped countries where gross nutritional deficiencies can be demonstrated that any real effort is made to teach good nutrition. In our society we seem to have defaulted to the charlatans who preach their own brand of nutrition hocus pocus, for profit.

Notwithstanding our shortcomings underdeveloped countries are turning to us for help. We need to develop a corps of persons dedicated to assist in raising the standards of living by promoting better health through a knowledge of nutrition and sanitation. These persons will have to come from the universities, but if there is no emphasis on nutrition at the school level, young people do not seek further knowledge at the university level. Hence we are unable to meet the demand for professional nutritionists for foreign assignments.

The Role Of The Dietitian

In North America, dietetics is practised by graduates of university courses in Home Economics. The educational qualifications are based on the subjects studied at the university and not on the name of the course. Hence, one of our leading universities offers a degree in Nutrition and Dietetics, instead of Home Economics. The basic requirements for dietetics is the study of foods and nutrition, based on a strong core of science

subjects, mainly Chemistry and Biology, including Physiology. There is also considerable emphasis on Personnel Administration and Cost Control. In nearly every province of Canada the practice of dietetics is restricted by an Act of the Legislature to members of the Dietetic Association. The qualifications for membership include a one-year internship in either hospital or administrative dietetics, following a university degree with an acceptable course content.

Therapeutic dietetics is an integral part of the hospital dietary service. Whereas it is possible for non-university graduates to acquire sufficient knowledge of food production and administrative procedures to provide food service in hospitals and in the restaurant industry, their lack of knowledge in nutrition and the nutritive values of the different foods, precludes the practice by these persons of therapeutic dietetics, and consequently qualified dietitians have become essential to the practice of dietetics as a paramedical service in hospitals.

Unlike home economics, where the very name implies participation by women, dietetics is not practised exclusively by women. Men have entered the profession and it is hoped that more men will do so in the future. There is a chronic shortage of dietitians and one of the major deterrents to recruiting men is the fact that entry into the profession in though the doors of Home Economics courses at the university. Whereas women aspire to obtain positions traditionally the prerogative of the men, the latter do not aspire to women's professions.

All dietitians are nutritionists by education, but in general only those who practice hospital therapeutic dietetics continue to study nutrition intensely. These dietitians could be called on for assistance in programmes of nutrition education, but since they are in short supply they rarely move out of the hospital field.

Nutritionists in government services at the federal, provincial and municipal levels are mainly qualified dietitians. The few exceptions are medical officers. In Canada nutritionists are engaged also in human research at the universities and in metabolic units at some hospitals.

Home Economists In Business And Industry

Professional home economists are employed in a variety of business and industrial firms. Generally, the choice is a matter of personal interest. Some are in foods, others in household appliances, a few in textiles. These home economists become specialists in a particular branch of the industry. They are essentially business women, but they bring to the job basic knowledge ac-

(continued on page 23)

SILAGE — (continued from page 7)
the hands. It is also a good idea to spill soil or sand down the sides until there are six inches or so all the way round the bottom. This not only tightens up the sheet all the way round, but protects the seal as well.

Labour problems

The speed of filling is clearly a controlling factor in making the best possible quality silage under this method. The problem is usually greatest on the small dairy farm where high-quality winter fodder is most needed. Making vacuum silage is one operation where machinery syndicates and neighbour co-operation are of real benefit, as weather conditions are of less importance than with haymaking. If contractors are available, their employment would be an alternative. A very large proportion of the silage in New Zealand is made by contract and 100 tons a day into the silo is not unusual.

When machinery and labour pooling is under consideration, the resultant acreage to be dealt with may warrant the purchase of a full chop harvester and a blower. This would simplify filling and also allow for wilting. Not only does wilting reduce the weight of water carried into the stack — an increase to 40 per cent dry matter would halve it — but there is no effluent at all.

Bigger farms may have both labour and machinery to handle 100 tons a day, but when 400 or more tons of silage are the aim, speed of filling once again becomes a problem. There can be no overall answer to these problems and while several 150- or 200-ton stacks may suit one farm this would not be the case on another. Because of the water-tight properties of sealed, polythene-covered stacks it might be worth while for some farmers to consider converting their present covered silos to house more stock and making all their silage in the vacuum method.

Feeding at the face of the stack

As with all silage, there will be a certain amount of rotting or oxidizing on the exposed feeding face if silage is not removed at least every two or three days. There will not be a layer of self-sealed silage on top of the stack, and so air should not be allowed to penetrate the length of the silo between the top sheet and the silage. A tourniquet of wire threaded through a polythene pipe, or a nylon rope tied every ten feet or so, will prevent this. The tourniquet can be pegged down either side of the stack or put in position before the bottom sheet is spread. An alternative is a line of old motor-car tyres along the edge of the rolled back top sheet; although not quite so effective, this method is reasonably good and is the most suitable where self-feeding is practised.

**From "Agriculture" the official publication of the British Ministry of Agriculture, Food and Fisheries.*

The author of this article, C. P. van Zeller, M.A. (Oxon.), is a N.A.A.S. district advisory officer. He was formerly an advisory officer in the New Zealand Department of Agriculture.

NEW MARRIED QUARTERS



An era has ended. The huts are vacant. No longer does the student-husband pore over his books to the cry of children three apartments away. No longer does the Maintenance phone dance to the tune of diverse complaints. All is quiet and Diaper Dale awaits the wreckers' boom.

Future families will reside in the smart, if compact new units provided in the apartment complex shown above. Improved facilities, and more privacy will be the highlight of life in the new building. There are 28 apartments with one and two bedroom units to choose from; fridge and stove are provided, and there is the added convenience of laundry facilities. A smart modern addition to an expanding campus — replacing the shoddy, but somehow lovable old Hut.

FILM —

RIVER WITH A PROBLEM

You can kill a river, swift and mighty though it may be. The pure waters that originate in mountain watersheds to flow across our land, often pass by cities — and die.

River with a Problem is a film about water pollution, a problem of growing concern wherever there is population density along lakeshore or stream.

In this film the river with a problem is the broad Ottawa, which originates in the Laurentian Shield, widens into Lake Temiskaming, and joins forces at Canada's capital with the surging Gatineau and the placid Rideau.

By the time it empties into the St. Lawrence at Montreal, the Ottawa is a river with a burden — carrying in its depths and near its surface the choking refuse of civilization and industry along its banks.

How does a river die? Color animation shows you how contamination changes the balance of nature in this

aquatic community. Lacking life-giving oxygen, microscopic plants and animals, small fish and large, die or depart, leaving only the spreading slime of algae.

But the problem is not unnoticed, as you see in this film. Interviews with engineering, health, and civic officials, including Ottawa's mayor Charlotte Whitton and Dorval's mayor John Pratt, show the active concern it is receiving in many quarters.

Here is a vital subject, clearly presented. A film for all audiences, especially organizations concerned with conserving and protecting one of our most precious natural resources.

16mm Color

Running Time: 29 minutes

Produced by the National Film Board. Film may be obtained from the Extension Film Library at Macdonald College for a nominal service charge — \$1.25 plus transportation.

DISPOSAL —

(continued from page 5)

age and so evaporation lowers the levels of these ponds.

Disposal by dehydration

Dehydration is a disposable method which produces a marketable byproduct from livestock production. The limited amounts of dehydrated manure are presently being produced in a few isolated areas of Canada and the United States. Many plants have been forced out of business in the past because it became a public nuisance or health problem. The Product made by dehydration has a low fertilizer analysis and is used mainly as an organic soil conditioner. Such manure which normally is marketed in bags has to compete with the dried sewage sludge which is available from many of the large city sewage disposal works.

Disposal on crop land

Manure may be considered an asset and a valuable by-product of animal production or a liability which must be charged against the livestock enterprise. The manure produced from livestock contains varying amounts of nitrogen, phosphorus and potash.

Van Arsdall of Illinois recently made a study of the economic value of manure from confinement finishing of hogs. All costs involved in handling, storing and distributing hog manure on crop land and through stabilization ponds (lagoons) were recorded and evaluated. Van Arsdall stated that unless liquid manure is quickly moved into a storage that provides air tight conditions, loss of nitrogen is quite high. He also said that nitrogen loss may easily amount to 50% or more under typical farm practices of storing manure in open vats as is now done on many farms in Illinois. He further

stated that unless 50% of the nutrients in the manure are saved, the cost of storing and spreading the manure on crop land is not repaid by the fertility elements. This is then a liability and must be charged against the livestock enterprise.

Sufficient land and crops are required to utilize the fertilizer elements available in the manure. A 1000 hog enterprise produces enough manure to fertilize 165-200 acres of continuous corn. This crop is a valuable feed-stuff but needs extra labour and money to produce and process. Considering the returns from crops there is a limit to the amount of manure that may be placed on land. There is a further limit due to the danger of nitrate poisoning of livestock when too much nitrogen is applied.

If the livestock enterprise is placed on a farm now engaged in crop production, manure will likely be considered an asset. If a large production unit is established on a small portion of land, manure will likely be considered a liability and must be disposed of in the cheapest possible manner.

New Practices

Interesting changes in the management of dairy, beef and hogs have led to a closer look at liquid manure handling. Labour and bedding shortages have brought on free-stall housing for dairy cattle and slatted floors for pigs. Of course any cut down on the amount of bedding makes for more liquids to handle since these are not soaked up by the bedding. But what are you going to do with it now that you have the manure in a slurry, because it won't stay in an ordinary spreader? The cost of storage facilities for liquid is quite a bit more than an open air stack. Information gathered from around the world by Professor Morris at Indiana lists the value of manure from pigs, cows and from other cattle and this is shown in Figure 1 along with information on costs of handling liquid manure from storage onto the land.



Portable irrigation gun; covers three acres per setting.

The trouble with the newer practices is that they are all laid out in systems. By systems we mean that many parts must fit together for the whole group to work. You know that handling a milking herd requires many other things than just the cow. Some people plug in a slatted floor into their hog barn and expect that it will solve all their labour and cleaning problems. This is like putting a cow into a hog pen and thinking you have a dairy farm. Manure handling is one of the important parts of any new practice and most of the new ones use liquid manure.

Improving present storage systems

All this does not stop farmers who now handle solid manure from doing something to save some fertilizer elements and prevent pollution. Some method of draining the runoff liquids into a tank can save this portion for spreading on crop land. This is workable if a neighbour has a vacuum tank for liquid manure and would remove the liquid on a custom basis. Others might own a side delivery spreader as shown in one picture, which will spread either liquid or solid manure or both. Some type of pump is needed though to get the liquid into the side delivery spreader. Another picture shows the business end of an irrigation system which we are using at Macdonald College to spread liquid manure from our dry sow and farrowing barn. this is hooked up by means of irrigation pipe to a high pressure liquid manure pump back at the building and about 200 gallons per minute of liquid manure, water and shavings are spread over an area of about 2 acres as this sprinkling gun revolves.

A close look at your manure handling methods will save a lot of grief if you are thinking of changing livestock housing. If some of the run-off from your manure pile is finding its way into a nearby stream some one may be taking a close look at you.

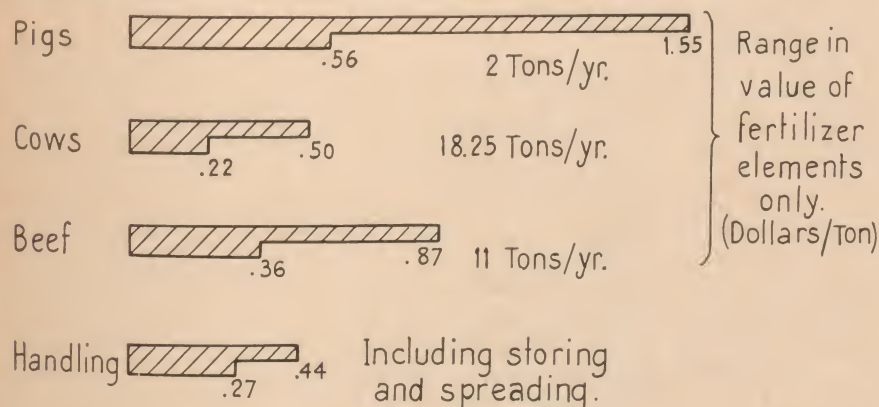


Figure 1. Some Costs of, and Returns from, using Liquid manure.

Compiled by T. Pickup of the Information and Research Service,
Quebec Department of Agriculture and Colonization.

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Cattle Imports

PHOTOGRAPHS BY
OMER BEAUDOIN

A French-Canadian herd sire at Ste. Croix, Lake St. John.



Evaluating Herd Sires

Breeding top-quality dairy cattle is becoming more of a science and less of an art.

And to help you be more scientific the Animal Research Institute has come up with a set of tables to use in assessing the merits of the various sires that are available through artificial insemination.

Dr. A. J. Lee, a researcher at the Institute, says that although many factors should be considered when selecting dairy bulls, the most important is milk production of their offspring.

The ability of a bull to raise milk production in your herd is measured by comparing milk production of his daughters with that of daughters of other bulls in the same herds. (Keeping comparisons within herds means that the records will be free of differences in feeding and management).

The daughter records are related to the average milk production of the herd as plus or minus deviations. Thus

(continued on page 16)

The New Minister of Agriculture and Colonization

Following the elections of June 5th, Mr. Clément Vincent officially succeeded Mr. Alcide Courcy as Minister of Agriculture and Colonization of Quebec on June 16th, 1966.

Mr. Vincent is no stranger to agriculture and the interest and concerns of farmers. As a farmer and son of a farmer and member of the U.C.C., he has long been interested in agriculture both in his native county of Nicolet and elsewhere. He was a member of the Canadian Farm Loan Board from 1957 to 1959 and a member of the advisory committee to the Farm Credit Corporation from 1959 to 1962.

Elected member of parliament for Nicolet-Yamaska in the federal elec-

tion of 1962, Mr. Vincent very soon proved himself to be one of the best-informed critics of Canadian agricultural policy.

The first official meeting between the new Minister and the heads of the various branches of the Department of Agriculture and Colonization was marked by a spirit of cordiality and good humour. Mr. Vincent was accompanied at this meeting by the Deputy Minister, Dr. Ernest Mercier, and introduced by the Associate Deputy Minister, Mr. Roméo Lalande. He commented later that in many cases he had found himself greeting old friends with whom he had often come in contact during his period at Ottawa.



The Hon. Clément Vincent, Minister of Agriculture and Colonization of Quebec.

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

Responsibility For Farm Management Services



At the annual meeting of ministers and deputy ministers of agriculture held recently in Vancouver, Mr. Clément Vincent took the stand that farm management cannot be separated from agricultural information and advisory services and that, since the provinces already provide such extension services for farmers, it is quite natural that they should also provide farm management services.

The question of shared-cost programmes for agriculture had been dealt with by Mr. Everett Biggs of the Ontario Department of Agriculture.

As regards farm management, the recommendations of the provinces were clearly defined as follows:

1. The provinces are in a better position than the federal government to provide farmers with the services necessary for the modernization of agriculture because they are in closer touch with their people.
2. The provincial departments of agriculture already have extension services, onto which it is logical to graft farm management services
3. The Canada Department of Agriculture should coordinate farm management services at the national level and ensure certain uniform basic standards in all the provincial services.

It was agreed that a meeting between senior representatives of the provincial and federal departments of agriculture should be held in the near future to draw up a national farm management policy and that the meeting should take place as soon as the Canadian Agricultural Economic Council is able to provide ministers of agriculture with copies of a report now being prepared concerning the standardization of farm management services throughout the country.

Mme Gaudias Biron of St-Agapit, Lotbinière, attends to the farm accounts, an important step in good farm management.

CO₂ KEEPS THE BOUQUET FRESH

Biochemists have long known that the gas ethylene affects plant tissues. Ethylene produced in the ripening of fruit can damage flowers, and it is therefore inadvisable to transport cut flowers and fruit in the same vehicle.

Plant tissues, including flowers themselves, produce ethylene, particularly when they are subject to damage or fungal attack. They also produce carbon dioxide, which is antagonistic both to the production of ethylene and to its damaging effects.

Recent investigations by W. H. Smith and J. C. Parker, of the Agricultural Research Council's Ditton Laboratory, near Maidstone, (*Nature*, Vol. 211, p. 100) suggest that normally the carbon dioxide produced by carnations is sufficient in a concentration as low as 0.35 per cent to prevent damage by the small amount of ethylene arising from their metabolism. However, if ethylene is produced at a high rate the carbon dioxide present may be insufficient to prevent damage.

The flower most sensitive to ethylene is the orchid, which is said to react to one part in 100 million of air. Carnations develop petal curl and their life can be reduced on exposure to one part in 20 million at ordinary temperatures. Concentrations of this order can readily arise in the presence of ripening fruit or rotting vegetation when ventilation is inadequate, when there is heavy smog in industrial areas, in a concentration of exhaust gases from internal combustion engines or through accidental leakage from gas mains.

Ethylene oxide inhibits the action of ethylene and has been suggested as an antagonist. It would probably be easier, however, to use the relatively non-toxic carbon dioxide gas should the need arise to take preventive action.

(From "New Scientist")

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

Minister of Agriculture Explains Dairy Policy

Agriculture Minister J. J. Greene has expressed concern that there still appears to be some misunderstanding as to the federal role in the present dairy support programme.

In a statement issued from his office, Mr. Greene said:

"In view of the lively interest in this matter currently evident, it seems timely to repeat pertinent facts already on the public record but apparently not yet fully understood in all interested circles.

"We believe purchase and subsidy measures which the Agricultural Stabilization Board is authorized to follow make it possible for processors to pay producers \$3.25 per hundredweight at the factory for milk testing 3.5% butterfat content.

"The federal government does not, however, have the authority to direct the price that processors should pay producers. This is a provincial authority under interpretations of constitutional responsibility.

"The same applies to conditions of sale, such as the cost of transportation, amortization of the costs of producer storage tanks, and so on.

"The federal policy for the dairy year that began last April 1st is designed to provide an average of \$4.00 per hundredweight for 3.5 per cent

manufacturing milk at the factory. It aims at achieving this by encouraging market conditions that make it possible for processors to pay \$3.25 and by adding to this a direct federal payment to producers of 75 cents per hundredweight.

"This represents an increase of approximately 40 per cent over the average return of \$2.85 to \$2.90 in 1962/63.

"In Ontario the provincial milk board has set \$3.25 per hundredweight as the minimum price processors may pay at the factory for manufacturing milk.

"In provinces where no such floor prices have been set through legislation, it remains a matter of market competition. It is the responsibility of producers and their organizations to bargain with processors for the best price.

"I believe the federal contribution to the stability of the dairy industry and towards easing the problems of our dairy farmers this year is a worthy and responsible one. Federal payments under the dairy program in the current year are expected to be in the neighborhood of \$90,000,000. This is \$40,000,000 more than in the previous dairy year and \$67,000,000 more than the yearly average of the last five years under the previous government."

(From "This Month with CDA")

AN INSECTICIDE FROM WASTE PAPER?

A few years ago Professor C. M. Williams of Harvard University followed up a chance observation, and discovered that American newspapers and certain other paper products inhibit the normal growth and development of the eggs and the mature stages of a plant-eating bug, *Pyrrhocoris apterus*.

The reason for this was subsequently found to be that some trees used in the manufacture of paper, especially the fir tree (*Abies balsamea*) produced a substance, provisionally named the "paper factor", which acted on the insect in the same way as its own "juvenile hormone".

The normal effect of this hormone is to prevent the pre-mature appearance of such adult features as wings and reproductive organs in developing insects, and its production stops when they are ready to become mature. If, however, they are then exposed to this "paper factor", it completely upsets their transition to maturity, and though possibly moulting once or twice more, these insects never become able to reproduce.

Now Professor Williams and Professor K. N. Saxena, of Delhi University, have found that the "paper factor" is also effective against a plant bug which is a considerable pest of cotton in India — the Red Cotton Bug, *Dysdercus koenigii*. This bug is a relative of *P. apterus*, and belongs to a genus of insects known as "Cotton Stainers" from their habit of piercing the cotton bolls and contaminating them with a fungus which stains the fibres.

In their experiments, Williams and Saxena used an extract of American paper towels, and found that this inhibited the bug's development, stopping the formation of adult features, and preventing the shedding of the old cuticle after moulting (*Nature*, Vol. 210, p. 440).

These workers point out that, although this is not yet a practical proposition as an insecticide, the starting materials — American newspapers and other paper products — are available in India in virtually unlimited quantities.

If a more highly purified preparation of "paper factor" can be produced, there are prospects of controlling this pest selectively. The prospects are particularly good because the insects are unlikely to be able to evolve any resistance to it. This method of control would thus avoid one of the main drawbacks found in recent years to be involved in chemical control of insect pests.

APPLE SCAB CONTROL

The orchardist is gradually winning the battle against apple scab.

Records at CDA's research station at Kentville, N.S. show losses from this disease decreasing, reports Dr. R. G. Ross, head of the Plant Pathology Section.

Dr. Ross, offered several reasons for the improvement.

- Better fungicides or chemical sprays for scab control have been developed throughout the years.
- The hand guns that were used for many years have been largely replaced by air blast sprayers which cover the orchards much quicker. Some orchardists spray at night, when it is calm, to get better spray coverage.
- Many of the less efficient growers have stopped growing apples and the industry is changing into larger, more efficient units.
- Plant pathologists have increased their knowledge of apple scab and are able to give more advice to the apple grower.

But Dr. Ross warns that growers should not become complacent and feel that the disease is not present or no longer a problem. Despite the more effective fungicides and equipment, poor planning or spraying can result in large losses of fruit from apple scab.

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

FORAGE SEED PROJECT

The Canadian Forage Seed Project is pushing ahead steadily with its program to provide farmers with certified seed of improved varieties of forage crops.

At its annual meeting in Ottawa recently, the project's coordinating committee moved to ensure that the demand for certified seed will be met. It approved the release of breeder stock of 14 varieties for multiplication to foundation seed by growers under contract with CDA. This seed will be multiplied subsequently to certified status.

At the same time, the committee allocated some 85,000 pounds of foundation seed of 15 varieties for multiplication to certified seed.

Represented on the committee are the federal and provincial departments of agriculture, the Canadian Seed Growers Association, the Canadian Seed Trade Association, and the universities.

Only four varieties were covered by the program in 1952 when the Forage
(continued on page 16)

Assistance Policy

AID FOR POULTRY-KEEPING IN SETTLEMENT AREAS



Young turkey poults starting life on a Quebec farm

In order to encourage settlers established on colonization lots to satisfy their own requirements for eggs and poultry, the Quebec Department of Agriculture and Colonization offers to qualified applicants a subsidy amounting to one-third of the purchase price of the following kinds and numbers of birds:

	Minimum	Maximum
Day-old chicks (both sexes)	40	60
OR		
Pullets from one day to four weeks old	25	50
OR		
Two-month-old turkey poults	10	25
OR		
Geese from one to two months old	10	25

CONDITIONS

1. This assistance is restricted to farmers residing in colonization parishes whose applications are recommended by the official agronome and approved by the regional inspector.
2. Orders must be combined together and accepted by a responsible agricultural organization which will undertake the purchases.
3. The subsidy will only be paid upon production of the vendor's receipted invoice or bill, accompanied by a list of all the beneficiaries.
4. The chicks, pullets, poults, or geese must come from a certified hatchery in the province of Quebec and be fully paid for by the purchaser, who is then responsible for seeing that each beneficiary receives his due share of the subsidy.

The Deputy Minister of Agriculture and Colonization
ERNEST MERCIER

(continued from page 12)

an output of 12,000 pounds of milk by a cow in a herd which averages 10,000 pounds would go on the individual cow's record as a positive deviation of plus 20 per cent.

It follows that the sires of cows with the largest pluses are the ones to be used for herd improvement. And that the young unproven bulls chosen for A.I. use should be from cows with the largest positive deviations and by sires with the best A.I. proofs.

The University of Guelph is in the process of developing a list of cows with large plus deviations. Such a list, combined with the Sire Appraisal issued every six months by the CDA's Livestock Division, would further aid A.I. units and individual dairy herd owners in picking suitable sires.

Interpretation of information is complicated by the fact that deviations on the cow list are generally not as important as deviations on the bull list and also that the

more daughters a bull has the more important is his deviation, Dr. Lee says.

For example, a deviation for a single record on a cow must be four times as large as a deviation for a bull with 15 daughters before the deviations have equal influence.

Also a deviation for a bull based on 15 daughters has twice the influence of a deviation for a bull with five daughters.

Since the number of records on cows and the number of daughters per bull vary over a wide range, it is hard to assign a proper weighting to give a reliable estimate of all prospective matings.

This is why the tables were developed. They give the proper weighting for the different breeding values and examples of how they can be used.

The set of tables can be obtained by writing to Dr. A. J. Lee, Animal Research Institute, Central Experimental Farm, Ottawa.

From "This Month With CDA"

Cattle Imports

A total of 252 persons have applied to the Canada Department of Agriculture for permits to import cattle from France this year, the CDA's Health of Animals Branch reports.

The number of cattle represented by the applications totals more than 1700 head. The present capacity of the Grosse Ile, Quebec, maximum security quarantine station is 110 head.

Each applicant has been informed of the health conditions, costs, and other details involved in the importation.

It is expected that the Canadian quarantine period at the Grosse Ile station will begin in October. This means that cattle from France will enter the French quarantine station at Brest some time during the latter part of August or early September.

Since cattle must be tested 30 days before entering the Brest station, selections will have to be made by the end of July.

The quarantine period on Grosse Ile is for a minimum of 90 days but because of the exhaustive testing required and ice conditions in the St. Lawrence River at that time of year, it is not expected that cattle will be released from the island until next April or May.

Importers are required to pay for the care and feeding of the livestock, both at the Brest quarantine station and on Grosse Ile as well as charges for special tests required on these animals. In addition, importers will pay a \$5.00-per-day-per-head quarantine charge for a maximum of 90 days on Grosse Ile.

Cattle imported from France must meet stringent health requirements and

go through a multitude of tests, all under the direct supervision of CDA veterinarians. Regulations include the following:

1. The area from which the animals originate must have been free of foot-and-mouth disease for at least nine months.
2. Only calves under nine months of age that have not been vaccinated against foot-and-mouth are eligible.
3. The herds of origin must be examined by a CDA Health of Animals Branch veterinarian and the individual animals offered for export must undergo a series of tests before they are permitted to move to the French quarantine station at Brest. These tests include those for tuberculosis, brucellosis, leucosis, leptospirosis, Johne's disease, and foot-and-mouth disease.
4. At Brest, the calves must undergo daily clinical examination as well as a further test for foot-and-mouth disease. If healthy at the end of this month-long quarantine period, they may be moved by boat to Grosse Ile, Quebec.
5. At Grosse Ile, The imported cattle go through the same tests as on the farms of origin plus a biological test for blue tongue. The quarantine here is for a minimum of three months, during which time Canadian cattle are added to the imported herd as test control animals.
6. After release from Grosse Ile, the animals are quarantined for a further 90 days on the premises of their new owners. During this period they are inspected regularly by CDA veterinarians.

FORAGE —

(continued from page 15)

ber has risen steadily since and stands at 21 for 1966.

The project, through promotional programs, also has played a major role in sparking greater use of quality, certified seed by farmers in Canada.

ALTERNATIVE STRATEGY FOR INSECT-KILLERS

A committee of inquiry set up by the Prime Minister of the State of Victoria in 1964 and which has just produced its report makes the point that although conventional pesticides will continue to be needed for many pests, it is unnecessary to rely on chemicals as much as we do at present. The alternative strategy which the committee recommends is to concentrate more on manipulating the pest's environment so that it finds it more difficult to survive.

The report demonstrates the variety of methods available. There are attractants which can be used to lure fruit flies to the insecticides. Male fruit flies, sterilized by radiation, can be introduced into a population to disorganize breeding. (Pests infesting stored grain, incidentally, can be destroyed by radiation). Heritable resistance to ticks can be used to safeguard cattle and the rotation of stock brought in to break the tick's life cycle. The use of insect predators is another weapon; the bdellid mite, for example, preys upon the Lucerne flea, Parasitism, too, has its uses, as in the case of the ichneumon *Rhyssa* which deposits its eggs in the larvae of the giant wood-wasp *Sirex*.
(From "New Scientist")

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.



THE BETTER IMPULSE . . .

News and Views of the Women's Institute of Quebec

The QWI in review

Notes from the Convenor of Publicity,
Mrs. H. E. Palmer :

The Women's Institute stands for solid ideals, for the continuing education of adults, and for projects which goodwill and better living for individuals and for communities. The Women's Institute presents a positive approach to living in the Sixties. WI work and WI publicity present an important counter to the current popularity of the 'protest cult', with its rash of protest songs, books, parades, riots and the negative attitudes so expressed. It therefore becomes imperative that WI publicity be promoted and increased wherever possible.

Radio and TV publicity remains limited. The four counties who have been able to use the Sherbrooke radio and television outlets, continue to do so. They give monthly talks on subjects of their own choosing, and also special programs. Only two other counties report radio and TV announcements, one in Quebec and one on Ontario outlets. The QWI is much indebted to neighboring American stations in Vermont and New York for announcements and broadcasts and telecasts by members. Miss Viola Moranville of Beebe, Que. deserves special mention as one of the best QWI reporters, giving eighteen (18!) broadcasts over Newport, Vt. and Sherbrooke, Que. Radio. Special mention also of the International program carried on Burlington, Vt. TV. a women's program featuring the WI and presented by and participated in by Quebec members.

Besides their reporting duties publicity convenors are in charge of at least one meeting a year. . . .

Institute members hold to their wider horizons and continue to look beyond themselves with interest and reward. The two busloads of Ontario members were warmly welcomed as they toured areas of Quebec. Increased interest in learning more about Northern Canada is evident, this interest taking tangible form in the mailing of knitting and crochet books, sewing pat-



This drama business is catching. Here is the cast of "Enjoying Poor Health", winners in the Argenteuil County drama festival.

Standing l. to r.: Mrs. P. Stephens, Mrs. M. Cowley, Mrs. A. Mason, Mrs. G. Morrow. Front row: Mrs. J. Morrison, Mrs. R. Williams, Mrs. F. Zimmer.

terns and magazines to Northern Institutes, and in the purchase of Coupon #367. Help was given to Northern Quebec branches too. Studies were made and support given to all major FWIC and ACWW projects. Particular attention was given to Pennies for Friendship with many novel methods employed to raise extra pennies.

Tours continue to be popular and instructive. The travelling Institute is always identified as a WI group and so publicizes itself. One tour was to the Montreal Star to see how news is gathered, sorted, and the steps required to print the finished newspaper.

The many community projects undertaken give the QWI some of the best publicity it receives. The sponsorship of special events, the cooperation with other groups, the promotion of an idea to get others working on it for the good of all — all contribute to our public 'image'. Certain special activities in the past year must be mentioned:

1) Centennial projects: In many instances the WI has been the moving

force in getting something started for Centennial, the prod that got a Town Committee organized, the organization with the long list of good, practical, not too elaborate or expensive, centennial projects. As well as promoting Centennial, projects many branches are doing something on their own.

2) The main sub-heading of Centennial is EXPO '67, Canada's most ambitious Centennial project. Q W I branches urge a) the importance of recognition of the WI, FWIC and ACWW at EXPO and their participation in whatever capacity possible. b) some branches are selling Expo tickets as money-raising project c) some branches are involved with 'Lodge-expo', with members sitting on committee planning accommodation — doing so at the request of Expo administration and government authorities.

3) QWI Drama Contests: with selected counties and branches presenting plays in competition. Local performances of plays have brought good publicity.

4) QWI seals: when used on correspondence, tally cards, table decorations etc. supply attractive and effective publicity.

5) Specials Ceremonies: giving of Life Memberships, donation of prizes, the birthday party of a 100-year old member are examples of events which gave publicity.

6) Special Celebration: honoring Mrs. W. Robinson of Ayer's Cliff WI for THIRTY YEARS of perfect attendance. Such loyalty witnesses to the worth of the WI and commands the attention of all, particularly those who 'never have time to go to the meeting'.

The Quebec Women's Institutes, as a vital organization, representing many rural women, deserves, and indeed must have, publicity. The branches and in particular the publicity convenors, are doing their very best to bring our groups, our goals and our activities to public attention. They sincerely appreciate the willing cooperation of the various publicity outlets in these efforts.

Report - Chairman of agriculture (CAC)

The primary question facing agriculture today appears to be how to give the consumer the finest graded, inspected and packaged product, at the lowest possible cost and yet give the primary producer a fair deal.

It is for this purpose that the Provincial Government has appointed a Royal Commission of Inquiry to investigate ways and means to increase the farmer's revenue to bring it in line with other industries.

It is true that we as consumers want the best and the most that we can obtain for our food dollar but as we are aware as we might be that we cannot or will not pay the price for the extras we ask for? Statistics show that dairy foods for example show only a 38% increase, while the average wage has doubled. Are we as aware as we should be of the increased costs of grain feed, machinery and parts, and labour which the farmer has to meet? Add to this the vagaries of the weather and the unstable law of supply and demand. When crops are good, the price is low; when prices are high, there is a small crop. Labour is at a minimum and wages are beyond the reach of the average farmer. Drought this year in many areas has been ruinous and is one of the causes of the high price of meat, but the consumer on the other hand can buy poultry at very reasonable prices.

CAC in their brief to be presented to the Government must stress the desirability of producers and consumers meeting together to study their problem and attempt to work out solutions. For instance, consumers could express their changing tastes to the producers and they, in turn, could establish new markets to satisfy these needs. We, the consumers, should, however, not become so involved in our desires that we stifle the initiative of the producers.

Every consumer should visit the Agriculture Pavilion at Expo '67 next year and then they will realize the vast amount of science and research that goes into the everyday task of producing the food we need. The actual cost of the product itself is often the very smallest part of the total cost of the article you buy, be it milk, apples or your breakfast cereal. The larger portion is swallowed up in packaging, grading, inspection, shipping and of course "Advertising".

Let us therefore examine ourselves the consumers, as well as the producers when we bemoan the high cost of living and ask ourselves: "Are we demanding too much and are we too unwilling to pay the price for these demands?"

In this, my final report to you, I thank you all for the privilege of working with you and for the opportunity you have given me so often to present my point of view on behalf of the rural women who are both producers and consumers.

*Elsie C. Ossington
Chairman of Agriculture*

Words of encouragement from Mr. Barrette to QWI delegates at convention

I have read your convention program and I imagine the interest that each member of the Quebec Women's Institutes has found in it, and, no doubt, it will result in many useful trends in your respective districts. Congratulations to the Quebec Women's Institutes for their magnificent work in the rural areas.

Even if many of your members belong to the towns, I see that you have well understood the problems of the country women.

Actually, it would seem that it is not realistic to think about rural life as a separate entity. Sociologists and economists have proved that there is no difference between the rural life and the life of any other ordinary citizen or family. Our modern means of communication — radio, TV, telephone, newspapers, highways, railways, and air travel etc. are no different wherever we live.

If we try to calculate the average age of the full time farmer, it will be between fifty and sixty. What about the others, those who are below fifty? They are mostly part-time farmers. If they are part-time farmers, I imagine they get part-time jobs here and there. Under those conditions, there is not a big difference between their situation or their way of living and those of many other workers. Even there, the facts prove that the more we move about, the less difference we see between what we used to call rural life and the life of the ordinary citizen. Nevertheless, I hesitate to think that they are absolutely similar.

Many farm problems affect not only the farmer himself but his family. Thinking of salaries, many farmers are no better off than laborers. But thinking of responsibilities, the farmer is the owner of his own enterprise with the risks it includes. Therefore, without having the same chances to get profits, they usually have the owner anxieties. Thus the farmer's wife and the life of the children are affected by such a situation.

Now you cannot live in the country and be in the immediate vicinity of schools, churches, markets and other public services. This equally influences the country family. In your programs and studies, I see you have all

those problems in mind. I am happy to see this kind of work; so you may be sure that your reputation is good with the Department of Agriculture and Colonization.

I know what you will ask me! Your Executive came to a meeting in Quebec with representatives of our Department. We know your needs and I hope you will very soon have satisfaction.

Programs are changing in the Department of Agriculture. We hope that in the near future you will have by districts, an advisor in home economics, at your disposition. This way we intend to be more useful, corresponding to your specific needs.

We had three divisions to which advisors in Home Economics were specially attached: cooking, sewing and weaving. In the future we will call them Nutrition, Textiles and Home and Furniture Arrangement, with another division to be added — Home Management.

Food: If it is important to be good at preparing meals, we believe that it is more important to learn the science of nutrition and to be familiar with the classification of goods and knowing what we can get with our money.

Textiles: The same with textiles — what to choose, what it is to be used for, and how to use it.

Handicraft: Before decorating a house with handicraft, do you think it is good to have a house and, if so, how is this house organized? I was told that many women used to walk about 12 miles a day in their home. Is it true? I don't know, but I will take advantage of this example to make a calculation; the speed of a soldier's walk is 3 miles an hour. To walk 12 miles, it will take 4 hours. Many mothers have no free time, some feel tired or sick. If by an efficient disposition of their furniture, and by a good arrangement of the kitchen and other rooms, it is possible to reduce the walking by half the distance, 2 hours will be saved in time and effort. We think in this way for home and furniture arrangement.

Home Management: There are many problems of budgeting. We will pay special attention to the study of all the financial problems we can find in managing a family business.

These, briefly, are our new plans. We are preparing our staff for this new approach. As you know, I cannot realize all this by myself, it will take time and patience. Please continue to let us know your needs and I encourage you in your programs. I think you are going the right way.

*Roland Barrette, agronome.
Dept. of Agriculture & Colonization
Quebec.*

The Month With The W. I.

The QWI Drama Project has aroused much interest in the counties where it has already been undertaken. In Argenteuil, the plays presented the first year of the contest proved so popular, that a county drama festival was organized a second year. Plays were well done and enjoyed by audiences in different places, and the casts thoroughly enjoyed participating in this project. Winner of the Festival this year was Brownsburg Branch, with their play "Enjoying Poor Health".

Shown in the picture is the cast of the play. The painting is the Trophy an original by Don Titman, donated by Mrs. McGibbon.

From left to right :

Back Row : Mrs. P. Stephens, Mrs. M. Cowley, Mrs. A. Mason, Mrs. G. Morrow

Front Row : Mrs. J. Morrison, Mrs. R. Williams, Mrs. F. Zimmer.

ARGENTEUIL : All branches entered exhibits in the WI handicraft display at the Lachute Spring Fair; delegates attended Provincial Convention. **Arundel** answered roll call with a word taken from Agriculture; report given on Leadership Course; planned Bazaar; Mr. G. McGibbon spoke on Agriculture. **Brownsburg** discussed Citizenship, with roll call on the obligations of a Canadian woman as a citizen; volunteered to work for Ottawa Exhibition. **Dalesville-Louisa :** guest speaker was Mr. B. Atchison who spoke on Water Pollution and the effects detergents have on water systems; named a common grammatical error and its correction. **Frontier :** Mrs. G. McGibbon was guest speaker, giving very interesting account of her trip to Ireland, with display of many souvenirs; for roll call gave a saying in French, followed by its English translation. **Jerusalem-Bethany's** meeting was held after a Caserole Supper; donated money to buy flowers for shut-ins; aprons in Institute colours made; donated to Children's Service Centre of Douglas Hospital; Mrs. E. McOuat spoke on her trip to California. **Lachute** held sale of tickets for Expo; heard informative paper on "Medicare in the Netherlands" written by Dr. Suzanne McKimmie,

convener Health and Welfare. **Lakefield** named a wild flower; donated to Lachute High School for Reference books; are making a quilt. **Pioneer :** Roll Call was an Exhibit of one's own handwork; donated to Senior Citizens' Home Fund, and to Lachute High School Reference Book Fund; Mrs. A. Thompson read "Look What's Happened to Ice Cream". **Upper Lachute East End :** guest speaker was Mr. R. Giles Jr. who spoke on Weekly Newspapers and Publicity, followed by informative question and answer period.

BROME : Abercorn : Mrs. E. Sherrer, delegate, gave very good report of Provincial Convention: *Thank you* cards received from Flambeau Home for clothing, and from Mrs. Reid for FWIC pin presented to her on their 40th Anniversary; plans made for Annual August School Fair. **Austin :** heard report on Library, made plans for Bazaar. **South Bolton** held pot holder contest, with potholders later sold, prize won by Mrs. H. Hill; painting of club room as Centennial project has been started; delegate Mrs. D. Lee gave good report of Convention; Mrs. H. Hill, delegate, and Mrs. M. Burbank attended Annual Meeting Brome County Family Services. **Sutton :** paper on preparing soil for plants, with many helpful hints on ways to restore life to depleted soils; another blood clinic to be sponsored by branch conveners, with refreshments to be served to donors.

CHATEAUGUAY - HUNTINGDON : **Dundee** packed and mailed 22 ditty bags and Christmas stockings. **Hemmingford** entertained Dundee; report of Convention given by delegates Mrs. J. Robertson and Mrs. C. E. Petch. **Howick :** Mrs. Brocklehurst spoke on Industrial Arts; quiz on QWI. **Orms-town** heard County President, Mrs. H. Robertson speak on Provincial Convention; entertained **Aubrey-Riverfield** Branch.

COMPTON : Brookbury had re-run of their play "Passing the Buck" for the benefit of those unable to attend the playoffs at Bury; catered for a wedding; canteen at an auction financially successful. **Bury** welcomed several new mem-

bers. **Canterbury** with the Ladies Guild served a hot turkey dinner and cold plate supper in Town Hall, Bury, on Dominion Day; a French-speaking member gave a sentence in French, for each member to read; she also gave the menu in French. **Cookshire : Rev.** Mate, guest speaker, spoke on the characteristics of a good citizen; Citizenship convener, Mrs. A. Darker urged conservation of water, spoke of water pollution and for improvement; Agriculture Convener, Mrs. R. Hodge, spoke on needless waste of food, and need for increased food production for world supply; Mrs. O. Farnsworth, Home Economics, urged broader knowledge of food values, and greater use of meat substitutes. **East Angus** won the play contest in the county, and presented their play at Provincial Convention; sold Expo tickets; named trees growing near their homes; prizes given in Junior Department of School Fair. **East Clifton** placed annual plants in local cemetery; homemade candy sold at playoffs of Compton County Plays; gift of maple syrup presented to exchange pupil from St. Johns, Newfoundland; donations made to Sawyer-ville cafeteria, and to Sunday School Picnic. **Sawyerville :** gifts presented to Mrs. Sutherland who is leaving the vicinity, and to Mrs. L. Hunt for directing and coaching their play "When Women Meet"; donated to Compton County Bursary Fund. **Scotstown** held picnic dinner at members camp; won second place in drama playoffs; presented the play again at a local concert.

GASPE : Darmouth River held successful food sale; donated prize money to two schools; Convention delegate gave excellent report. **Gaspe** heard convention report by their delegate; Dr. E. Coffin was guest speaker on the topic "Estrogen"; roll call was Bring and Buy realizing good sum to be used to buy milk and fruit for underprivileged children at school; papers on simple way to sew on buttons; "there can be too much freedom", 94 year-old doctor finds it hard to retire. **York :** each named another country where there is a WI. : discussion on Village History, with 1966 being York's Cen-

ennial; County President was honoured guest; Wakeham's delegate to Leadership course reported on it and was most interesting; Branch President gave excellent Convention report; Expo tickets sold.; Contest: Who Am meeting.

1 — Prominent People.

GATINEAU: Aylmer East heard Mrs. G. Haggart, RN speak on Pills, emphasizing that dosage to be taken should be according to doctor's orders.

Breckenridge collected for Cancer Society. **Eardley** collected for Ade Home for the Aged. **Rupert** sponsored a school picnic.

JACQUES CARTIER: Ste Anne's held Pot Luck Supper

MEGANTIC: Inverness working on a centennial project; roll call — If you were rich, what good deed would you do for the needy? Held summer picnic

MISSISQUOI: All branches mentioned interesting reports on Provincial Convention. **Cowansville** answered roll call by describing a current event; held a no-bake food sale. **Fordyce** sold Expo tickets; sold lace-edged pillow slips, and electric razor to raise funds.

Stanbridge East refurbished old dolls and furniture for Missisquoi County Museum; committee appointed to work for village beautification for Centennial.

PAPINEAU: Lochaber named a Canadian Industry and its history as roll call; and as a result of this received an invitation from the Singer Co. in Thurso to visit their shop where they make furniture; Mrs. Maloney gave very interesting report on Convention; collected Pennies for Friendship; letter read from CARE requesting old or new clothing.

RICHMOND: Cleveland sold Expo tickets, netting nice profit; Mrs. G. Perkins gave excellent Convention report.

Denison's Mills entertained Cleveland branch and enjoyed playing Bingo; heard interesting reading on Trees by Mrs. C. Carson and report of Convention by Mrs. K. Stevens, County President; sale of homemade doughnuts.

Gore heard Convention reports from their 2 delegates; sale of remnants, bias binding etc., which had been donated; donated to Sherbrooke Hospital.

Melbourne Ridge heard good articles read by conveners; booklets distributed on Food, Drug and Cosmetic protection for Canadians; completed renovation of their WI Hall; catered a wedding; planned having lunch booth at local fair. Richmond Hill continue quilting gift to child in Dixville Home; contest on Know Your Salt won by Mrs. J. Hawker. **Richmond Young Women** catered a wedding; members were taken out to a Kentucky Fried Chicken Luncheon. **Spooner Pond** named an historical event and its date; sold Expo tickets; Mrs. K. Stevens, County Pre-

sident was guest; 3rd prize painting at Convention done by a member, Mrs. F. Noble; citizenship contest held.

ROUVILLE: **Abbotsford:** Mrs. H. Palmer gave the meeting some interesting suggestions concerned chiefly with personal public relations as the best type of publicity, and urged more use of Montreal papers and other media if possible; slides shown by Mrs. A. Rowell of members at Annual Convention, and slides taken at Granby High School Graduation; Mrs. H. Marshall reported a good reception by the members of the Granby Protestant School Board at the first meeting she

attended as School Board Commissioner.

SHEFFORD: **Granby West Branch** catered a wedding luncheon to replenish their funds; roll call was a pet peeve. **STANSTEAD:** **BEEBE** saw a film from Macdonald Extension Service; some members attended Lennoxville W. I. meeting. **Tomifobia** toured the Old Stone House in Brownington, Vermont, instead of holding regular meeting; then joined in a picnic at the 4 H Club in Derby, Vt. **Beebe** also attended a Home Demonstration Group meeting at East Craftsbury, Vt. donated to a local swimming project.



by Norma E. Holmes

Dear Min:

As Andre said, of Belgium, "All the nations love us. They must, because whenever they get mad at one another they always come here to fight."

Into Germany — just across the bridge from Luxembourg. We were told the USA poured millions into their economy after the war and now the Germans are the most prosperous people in Europe and they are buying property all over the globe. Certainly many of the tourists we saw everywhere were from Germany. The Saar Valley is a forest of factory chimneys.

Women work in the fields in all European countries. We saw groups stopping to have a picnic lunch together. In one field they were harvesting potatoes. Carroll said, "You see, the women pick them up and put them in the sacks and then the men tie the sacks. Once I saw a woman plowing and the man was leading the horse." At first, I wondered if I should mention these things before John, but I decided it was a couple of generations too late for him to do anything about it. One farm had just two men. They were bachelors — or women-haters.

Overnight in Heidelberg, a lovely spot on the river Neckar. New and old buildings for the University. We toured the old castle. Our guide. — Elfreda —

said it was for three or four hundred years a small fishing village, but a prince built the castle and gradually surrounded himself with nobles, a court, and it became like a little kingdom. The farmers paid rent in wine and in the basement there is a wine cask which holds over 50,000 gallons. She said it was the largest in the world and none questioned her. The lord didn't serve that wine to his guests — unless he was just entertaining the local yokels. There is a gate called Elizabeth's Gate which her royal husband built as a surprise for her or once when she was away. She, by the way, was the daughter of James I and her grandson became George I of England. (Encyclo. Britt. please forgive Elfreda is that is all wrong.)

Lunch next day in Freiberg, which I should like to see more of. Glimpses of fascinating streets looking up at a mountain. We got to Emmensbrucke, suburb of Lucerne to stay a couple of days and that evening took in a terrific show at a cafe, Swiss music, yodelling, horns (the kind that are so long they rest on the ground), and the best comedian, Alfredo, apparently known all over the country, that I have ever heard. On second thought, I didn't hear him, it was all in pantomime.

Eloise.

THE STORY OF MARY STEWART

When we hear of Mary Stewart, the first thought that comes to us is "Mary Stewart's Collect". Written in 1904 at Longmont, Colorado, as a prayer for the day, it has found its way about the world wherever English-speaking women work together.

A blending of personal charm, sympathy, reverence, justice and intellectuality, a little bundle of dignity and energy, Mary Stewart remains an inspiration to hundreds of students who came under her tutelage during the years she was principal of the High School at Longmont.

Born in 1876, in Ohio, daughter of F.P. and Laura Stewart, Mary spent her childhood years at Georgetown, Colorado, high up in the Rocky Mountains, "climbing over stony hillsides, hunting wild flowers, daring steep cliffs and playing along tumbling springs — with occasional visits back East — a region of culture to the majority living west of Buffalo — and interims of going away to school, I lived among the pines and peaks, the mines and mountain trails of Georgetown. To be sure, the earth and the sky and the mountains weren't the whole round of my young life, but they somehow gave it direction. Most of my undergraduate college work was done at the State University of Boulder, its campus overlooking far-reaching plains to the East but towards the West breaking abruptly into jagged cliffs that climb through gorge-slashed canyons to ice-capped peaks. Thus through my college days, mine eyes still lifted to the hills while my mind explored the classics".

Miss Stewart never ceased "going to school". The University gave her a B.A. degree and in 1927 an honorary degree in Litt. M. Her first post was principal of High School, Longmont followed by a period at East High School, Denver. Stagnation was not in her vocabulary. She frequently took time for study, which included courses in Columbia and Chicago Universities, travel in Europe, Mexico, Hawaii and many parts of the U.S.A. She was Dean of Women in the University of Montana for eight years, teaching also Latin and English and publishing a book of selected translations of lyrics of the Latin poet Catullus.

She was a Charter member of the Women's Joint Congressional Committee, for eight years as legislative representative for the National Federation of Business and Professional Women's Clubs.

From 1921, most of Miss Stewart's professional work was with the government; for six years in the United States Employment Service, Department of Labour, in charge of junior guidance

and placement, later as Assistant Director-General. From 1928 in Office of Indian Affairs, as Assistant Director of Education and from 1936 as superintendent at large.

"The Collect for Club women", written while she was at Longmont, member of women's clubs of town and country, is her outstanding achievement for members of the Women's Institutes. A musical setting for the Collect was composed in 1942 by Miss Pearl Brown, of Texas, whose letter of thanks to Mary Stewart for "your very gracious letter giving me permission to set your Prayer to music", ends with these words: "The local admiration came very sincerely for both words and music, and at this time, when women need inspiration, courage and hope, perhaps it will help in its own way to keep our faith".

Mary Stewart herself, says of the Collect, "I called it a 'Collect for Club Women' because I felt that women working together, with wide interests for large ends, was a new thing under the sun and that, perhaps, they had need for special petition and meditation of their own".

When the women of England began their Women's Institute work, Mrs Alfred Watt introduced the collect; and it is now used wherever English-speaking women work together. This prayer now has an official place on hundreds of programmes of the major organizations of English-speaking women, including the Federated Women's Institute of Canada.

Mary Stewart slipped away peacefully on April 1, 1943, after 67 strenuous years, at the home of her brother and sister-in-law, Rae and Estelle Stewart, Ohio, with whom she had lived since her retirement. Her body rests in the family plot at Loveland, Colorado, in the shadow of the crags and peaks of the Rockies which she loved so well, but her spirit is with us still when we say together, "Oh Lord God, let us not forget to be kind".



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266 YEARS SERVICE WITH AGRONOMY DEPT.

Macdonald College recently honoured six of its retired staff members, all of the Agronomy Department. The combined service of these men to the college and to rural Canada totals 266 years. Professor Lods was a member of the second graduating class and the plant breeder responsible for Montcalm Barley, which swept Canada a few years ago.

William Barclay was the head teamster for the college during the days of horse farming.

Leo Neveu was the Lab. Technician who worked with Dr. John Bubar on the Birdsfoot Trefoil project which resulted in the variety named after himself — Leo.

Seated, left to right. 1. Wm. Barclay, 2. James Coull. Standing, left to right. 3. Frank Millinchamp, 4. Prof. E. A. Lods, 5. Leo Neveu, 6. J. B. Dubreuil.

IN MEMORIAM — TRAGIC ACCIDENT

A tragic accident has taken the life of one of our students. William Jonathan Africanus John, drowned



June 30th while at summer employment on the site of Expo 67.

William was a 3rd year entomology major from Sierra Leone, whose study was being sponsored by the Federal External Aid Office.

GALEN DRIVER RETURNS TO MAC

It seems a few short months ago that the name of Galen Driver last appeared on this Journal's masthead as Editor. At the same time he was Secretary of the Quebec Farmer's Association and the Farm Radio Forum. Since then, Galen has completed his Master's at Michigan State University, majoring in Agricultural Extension and with a minor in Resource Development. He recently returned to Macdonald College to the post of Assistant Director of the Extension Service.

quired at the university and they apply it to the particular industry that they serve. In many cases their role is to provide a link between the producer and the consumer in consumer education programmes.

A Look At The Future

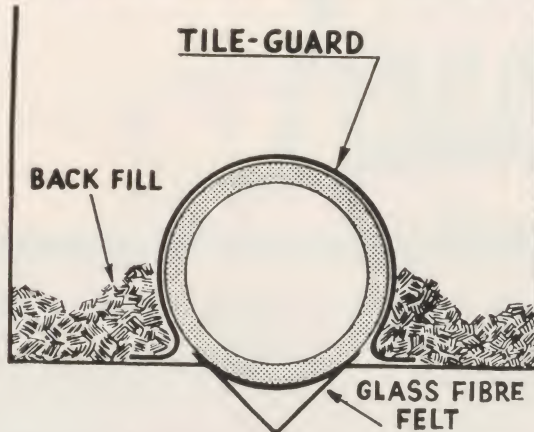
In looking into the future in this rapidly advancing age of technology, we wonder what will happen to family life and the home. If the present trends continue, the family of the future may be almost entirely dependent on prepared foods, prefabricated clothing and semi- or fully automatically controlled housing, where specialized skill will no longer be needed by the mother. Clothes will be made of synthetic fabrics and everyday clothing will be largely disposable. Most of our foods will be pre-prepared and will require little or no care in storing, since they will be processed and packaged to prolong shelf life. With new irradiation techniques, storage without refrigeration may be possible for many foods such as meats, which we now consider to be highly perishable. The housing for each family will be a small compact unit in a multiple housing development. Each home will be stream-lined and easy to clean. Many of our large household appliances, such as washing machines, will be replaced by community services, with a consequent saving of space. The consumer will be more prone than ever to purchase for the household on the basis of cost, packaged appearance and possibly the bonus included with the purchase. Advertising will be more blatant and competitive than ever.

Apart from the care of the small infant by the mother, the roles of the father and mother will be less clearly defined than in the past. The mother will work away from the home, except for relatively short periods of time. Because of the changing role of the mother in the home, the traditional ties that have bound the family together, namely, dependence on the mother for meals, care of the clothing and household skills, will largely disappear. Far-fetched, perhaps it is, but the trends are showing now.

Professional Home Economists must look to the future and try to adapt to the changes in society. As the present trends progress, there will be an ever-increasing need for educated women to serve the public in providing consumer education at both the school and the adult level. Both in our universities and in our professional associations we must plan wisely, so that we may continue to serve the interests and the welfare of the home and the community in the new age. We hope that we may be equal to the challenge.

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